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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,347	05/09/2001	Mamoru Aoki	313KA/49958	3042

7590 05/03/2002

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[REDACTED] EXAMINER

ELKASSABGI, HEBA

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 05/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/851,347	AOKI ET AL.
	Examiner	Art Unit
	Heba Elkassabgi	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on March 01, 2002.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1 and 2 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1 and 2 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 01 March 2002 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on 01 March 2002 is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. 09851347.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Drawings***

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on March 1, 2002 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The objection to the drawings under 37 CFR 1.83(a) is withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara U.S. 5841210 as applied to claim 1 and 2 above, and further in view of Yoshimura et al U.S. 5510661.

Obara discloses in Fig. 1 a motor in which the stator and rotor are covered by a housing, a ball bearing between the housing and shaft, an inner peripheral surface for

the housing, a bearing with inner and outer race, an inner race having an inner peripheral surface, an outer race having an outer peripheral surface, the inner race being fixed to the shaft through press-fitting between the outer peripheral surface of shaft and inner peripheral surface inner race, the outer race being fixed to the housing through press-fitting between outer peripheral surface of outer race and inner peripheral surface of housing, but does not disclose a shaft with outer grooved peripheral surface.

Yoshimura et al. discloses a shaft in Fig. 1 with an outer knurled portion of the peripheral surface in which the inner race is fixed to the shaft through one press-fit and by an adhesive between the outer peripheral surface of the shaft and the inner peripheral surface of the inner race for the purpose of the knurls help providing a reliable bond between the inner race and the shaft.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Obara's invention by adding an outer knurled portion of the peripheral surface of the shaft for the purpose of the knurls help providing a reliable bond between the inner race and the shaft.

With regards to the claimed invention except for the claimed relationship between the ball bearing and knurled grooves. It would have been obvious to one having ordinary skill in the art at the time the invention was made to propose with the ideal number of grooves on the shaft, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

***Response to Arguments***

Applicant has overcome 35 U.S.C. 112, second paragraph rejection of claims 1 and 2.

Applicant's arguments filed March 3, 2002 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine references was provided, in that the knurls provide lubrication. The examiner agrees that the motivation is not correct, however Yoshimura et al. (U.S. Patent #5,510,661) clearly teaches that the knurls help provide a reliable bond between the inner race and the shaft.

The applicants' argument in regards to *In re Aller* is not persuasive. Yoshimura et al. teaches that knurled grooves to support a rolling bearing on a shaft, therefore determining the number of the knurls and the number of the rolling members involves mere experimentation. The applicants' argument that Yoshimura et al. teaches away from the claimed relationship is not persuasive. Yoshimura et al. does not disclose any harmful relationship between the ratio of the knurls and the rolling members, such that a

person of ordinary skill in the art would be lead to maximize motor performance. The rejection is proper and maintained.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HYE  
May 1, 2002



NESTOR RAMIREZ  
SUPERVISORY PATENT EXAMINER  
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